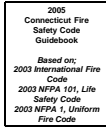


The Connecticut Fire Safety Code



Code Philosophies

- o **ICC**
 - *The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, sanitation.....(ref. 101.3, CT Bldg Code)*
- o **NFPA**
 - *The Code addresses those construction, protection, and occupancy features necessary to minimize danger to life from fire, including smoke, fumes and panic. (ref. CFSC Part IV-1.1.2)*

Code Focus

- o **NFPA**
 - Code requirements focused on the use of the building.
 - Occupancy chapters provided a road map for the review and inspection process.
- o **ICC**
 - Primarily focused on maintaining the integrity of the building.
 - Provisions arranged by building feature.
 - Exceptions based on occupancy are noted in each chapter.



Code Structure

o NFPA-101

- Core Chapters
 - Apply to all occupancies to the extent called for by the occupancy chapters
- Occupancy Chapters
 - Provide a menu of requirements and path to the core chapters

o IFC

- Chapters broken down by building components
 - i.e.: Fire Protection Systems
- Requirements per occupancy noted within the component chapter.



Part III is based on the IFC and IBC.



- o *Part III is organized according to building features.*
- o *Most of the requirements based upon the use of the building are found within the feature chapter.*
- o *Part III does not contain an appendix.*



ICC Based Code

Chapter 9 Fire Protection Systems

901 General 65
902 Definitions 65
903 Automatic Sprinkler Systems 68
904 Alternative Automatic Fire-Extinguishing Systems 75
905 Standpipe Systems 78
906 Portable Fire Extinguishers 80
907 Fire Alarm and Detection Systems 82
908 Emergency Alarm Systems 93
909 Smoke Control Systems 94
910 Smoke and Heat Vents 102
911 Explosion Control 104
912 Fire Department Connections 106
913 Fire Pumps 107
914 Carbon Monoxide Detectors 107
915 Fire Command Center 108

Chapter 10 Means of Egress

1001 General 109
1002 Definitions 109
1003 General Means of Egress 111
1004 Occupant Load 112
1005 Egress Width 114
1006 Means of Egress Illumination 115
1007 Accessible Means of Egress 116
1008 Doors, Gates and Turnstiles 118
1009 Stairways and Handrails 124
1010 Ramps 128
1011 Exit Signs 129
1012 Guards 130
1013 Exit Access 131
1014 Exit and Exit Access Doorways 133
1015 Exit Access Travel Distance 135
1016 Corridors 136
1017 Exits 137
1018 Number of Exits and Continuity 138
1019 Vertical Exit Enclosures 139
1020 Exit Passageways 141



Reading ICC Codes

o Code Enumeration

- First 1 or 2 numbers indicate Chapter
 - **903.2.1.5**
 - **Chapter 9 FIRE PROTECTION SYSTEMS**
- Numbers prior to decimal indicate section number.
 - **903.2.1.5**
 - Section 903 Automatic Sprinkler Systems
- Numbers following decimal indicate sub-section
 - **903.2.1.5**
 - **903.2.1.5 Group A-5.** An automatic sprinkler system....



5 Components of the CFSC



- o I. Administrative
- o II. General
- o III. New Construction, Renovations, Change of Use
- o IV. Existing Buildings/Occupancies
- o V. Maintenance and Operational Issues
 - **Part V applies to both new and existing occupancies**

○ ○ ○

Part I - Administration

- Applicability
- Authority Having Jurisdiction
- Plan Submittal & Review
- Building Permit and Approval
- Variations or Exemptions
- Inspections
- Building Official Reports
- Certificates of Occupancy
- Application
- Changes of Occupancy or Use

○ ○ ○

Part II - General

- Application – Applies to all occupancies and uses, both new and existing.
- Referenced Publications
 - List documents that are referenced in whole or part by the code.
 - Note the year referenced.



○ ○ ○

Part III – New Construction, Renovations, Changes of Use





Part III Chapters

- o Chapter 1 – Administration
- o Chapter 2 – Definitions
- o Chapter 4 – Special Use and Occupancy Requirements.
- o Chapter 6 – Building Services Equip.
- o Chapter 7 – Fire-Resistance Rated Construction
- o Chapter 8 – Interior Finishes
- o Chapter 9 – Fire Protection Systems
- o Chapter 10 – Means of Egress
- o Chapter 15 – Flammable Finishes
- o Chapter 22 – Motor Fuel Dispensing/Repair Garages
- o Chapter 23 – High-Piled Combustible Storage
- o Chapter 24 – Tents, Canopies & Membrane Structures
- o Chapter 45 – Referenced Standards



Fire Code References to the Building Code

- o 401.7 Group I-2 Occupancies shall comply with Section 407 of the State Building Code and other applicable provisions of this code.
- o 4 or more persons who are incapable of self-preservation
 - Hospitals
 - Nursing Homes
 - Mental Hospitals
- o Section 407 (CSBC)
 - 407.2 Corridors
 - 407.2.2 Nurses Stations
 - 407.2.3 Mental health treatment areas
 - 407.2.4 Gift shops
 - 407.3 Corridor Walls
 - 407.4 Smoke Barriers
 - 407.5 Automatic Sprinkler system
 - 407.6 Automatic Fire Detection
 - 407.7 Secured Yards



CHAPTER 2 DEFINITIONS

o OCCUPANCY CLASSIFICATION

Occupancy groupings reflect:

–Design Features

–Usage Patterns

–Unique life safety needs of occupants.



Assembly (Use Group A)

- Assembly group A includes the use of a building or structure, or portion thereof, for the gathering together of persons for purposes such as civic, social or religious functions, recreation, food or drink consumption or awaiting transportation. (Part III-202 CFSC)
- Part IV for existing buildings does not contain Assembly occupancy sub-classifications.



A-1 Assembly Use

- Usually with fixed seating intended for the production and viewing of performing arts or motion pictures. (Part III-202 CFSC)
 - Motion Picture Theaters
 - Symphony Halls
 - Television Studios (with audiences)



A-2 Assembly Use

- Intended for food or drink consumption.
 - Banquet Halls
 - Night Clubs
 - Restaurants
 - Taverns
 - Bars



A-3 Assembly Use

- Intended for worship, recreation, or amusement and other assembly uses not classified elsewhere in Group A
 - Arcades
 - Art Galleries
 - Bowling Alleys
 - Community Halls
 - Courtrooms
 - Dance Halls
 - Funeral Parlors
 - Gyms (no spectators)
 - Libraries
 - Museums
 - Pool and Billiard HALLS



A-4 Assembly Use

- Intended for viewing of indoor sporting events and activities with spectator seating
 - Arenas
 - Skating Rinks
 - Swimming Pools
 - Tennis Courts



A-5 Assembly Use

- Intended for participation in or viewing outdoor activities
 - Bleachers
 - Grandstands
 - Stadiums



Assembly Occupancy Classifications

- o **Part III – New**
 - A1
 - A2
 - A3
 - A4
 - A5
- o **Part IV – Existing Buildings**
 - No sub-classifications



Business (Use Group B)

- o **Business Group B** *Use of building, structure or portion thereof for office, professional or service-type transactions including storage of records and accounts (Part III-202 CFSC)*
 - Air Traffic Towers
 - Animal Hospitals
 - Banks
 - Barber and Beauty Shops
 - Car Wash
 - Civic Administration
 - Clinics
 - Education (above 12th grade)
 - Data Processing
 - Labs
 - Motor Vehicle Showrooms
 - Post Offices
 - Print Shops



Group B Medical Occupancies

- o **Group B Medical Occupancies** *Provides treatment for 4 or more patients who may be simultaneously incapable of self-preservation (Part III-202 CFSC)*
 - Outpatient clinics with general anesthesia or life support equipment
 - One-day Surgical Centers
 - Dental Centers using anesthesia.



In-Home Group B

- o In-home business occupancies located within a single family dwelling unit.
- o Provides professional services.
- o Employees one employee within the unit in addition to the residents of the dwelling unit.



Business Occupancy Classifications

- o **Part III – New**
 - Group B
 - Group B Medical
- o **Part IV – Existing Buildings**
 - Business Occupancies
 - Part IV Chapter 39
 - Ambulatory Occupancies
 - Part IV Chapter 21



Educational (Use Group E)

- o **Group E Educational** *Use of a building, structure or portion thereof by 6 or more persons, at any one time, for educational purposes through the 12th grade . (Part III-202 CFSC)*
 - Religious education rooms which are accessory to churches are classified as A-3.
 - College classrooms are classified as Use Group B
 - Day Care Uses with more than 6 children over the age of 3 years are classified as Group E.



Factory/Industrial (Use Group F)

- Group F Factory
Includes the use of a building, structure or portion thereof for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations not classified as Group H or S
- Two Hazard Classifications
 - F-1 Moderate-Hazard
 - F-2 Low Hazard



F-1 Moderate Hazard

- Factory uses not classified as S-2
 - Aircraft
 - Appliances
 - Bakeries
 - Business Machines
 - Carpet
 - Electronics
 - Laundries
 - Paper Goods
 - Upholstering Plants
 - Cabinet Making



F-2 Low Hazard

- Involves manufacturing or processing of non-combustible materials, where processes do not involve a significant fire hazard
 - Bricks and Masonry
 - Ceramic Products
 - Foundries
 - Glass Products
 - Gypsum
 - Ice
 - Metal Products



High Hazard (Use Group H)

- **Group H High Hazard**
Includes the use of a building or structure that involves manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those found in Table 307 of the IBC
- **5 Sub classes**
 - High Hazard Group H-1 through H-5



High Hazard Group H-1

- **Detonation Hazard**
 - Explosives
 - Organic Peroxides
 - Class 4 Oxidizers
 - Unstable (reactive) materials
 - Pyrophoric materials



High Hazard Group H2

- **Deflagration Hazard or high hazard from accelerated burning**
 - Class I, II or IIIA flammable or combustible liquids in open containers
 - Combustible dusts
Flammable gasses



High Hazard Group H-3

- o Materials will support combustion or pose a physical hazard.
 - Class I, II or IIIA flammable liquids in closed containers
 - Consumer Fireworks
 - Class 2 and 3 Oxidizers



High Hazard Group H-3

Consumer Fireworks
2009 Errata

- o Class 1.4G Sparklers/Fountains



High Hazard Group H-4

- o Materials that are health hazards.
 - Corrosives
 - Highly Toxic Materials
 - Toxic Materials



High Hazard Group H-5

- Semiconductor fabrication facilities and comparable research and development areas.



Institutional (Group I)

- *People cared for or living in a supervised environment and having physical limitations because of health, age, treatment or confinement.*
 - Hospitals
 - Nursing Homes
 - Prisons
 - Day Care
 - Adult Care Facility
 - Child Care Facility



Institutional Group I-1

- More than 16 persons
- 24-hour basis
- Supervised environment with **personal care services**
- Capable of responding to emergency without physical assistance from staff
 - Assisted Living Facilities
 - Convalescent Facilities
 - Residential Board & Care



Institutional Group I-2

- o Medical, surgical, psychiatric, nursing or custodial care.
- o 24-hour basis
- o 4 or more persons who are incapable of **self-preservation**
 - Hospitals
 - Nursing Homes
 - Mental Hospitals
- o Also See Section 407.12 for 4-6 residents



Institutional Group I-2

Child Care Facility 2009 Errata

- o Facility that provides care on a 24 hour basis to more than 5 children less than 3 years of age.

Exception: If 5 or fewer will be classified as R-3



Institutional Group I-2

- o Alternative compliance for small group homes 2009 Errata



Institutional Group I-3

- 4 or more persons
- Under restraint or security
- 5 use conditions based upon degree of movement permitted
 - Correctional Centers
 - Detention Centers
 - Jails
 - Prisons
 - Reformatories.



Institutional (Group I-4)

- Day Care Facilities
 - Persons of any age who receive custodial care for less than 24 hours by other than parents, guardians or relatives b y blood, marriage or adoption in a place other than the home of the person cared for.
 - A facility with **6 or fewer** persons shall be classified as R-3 and shall comply with the *International Residential Code*.
 - Places of worship during religious services are not included.
 - Sub-categories:
 - Adult Care Facility
 - Child Care Facility



Adult Care Facility

- Provides accommodations for less than 24 hours per day
- More than 6 unrelated adults
- Provides personal care services
- Classified as I-4



Child Care Facility

- Provides supervision and personal care for less than 24 hours per day
- More than 6 children
- 3 years old or less
- Classified as I-4
- *Exception*
 - 1. *Classify as Use E when 6 – 100 children at LED with direct exit.*
 - 2. *Classify as R-3 when less than 6 children.*



Mercantile (Group M)

- Buildings or portions thereof used for the display and sale of merchandise.
- Involves stocks of goods and wares
 - Department Stores
 - Drug Stores
 - Markets
 - Motor fuel-dispensing
 - Retail or wholesale stores



Residential (Group R)

- *Building, structure or portion thereof used for sleeping purposes when not classified as Group I*
- Four Categories:
 - R-1 Hotels, Bed & Breakfast Establishments
 - R-2 Apartments
 - R-3 Not more than 2 dwelling units
 - R-4 Residential Board and Care



Residential R-1

- Residents are primarily transient (less than 30 days)
 - Boarding Houses
 - Hotels
 - Motels
 - Bed & Breakfast Establishment



Bed & Breakfast Establishment

- Owner occupies the building or a building on the premises as a primary place of residence
- Not more than 16 persons
- No provisions for cooking or warming food in the guest room
- Not in a mixed use
- Fire evacuation plan to be prominently posted in each room.



Residential Group R-2

- Sleeping units or more than 2 dwelling units **primarily permanent** in nature
 - Apartment houses
 - Boarding houses (non transient)
 - Convents
 - Dormitories
 - Fraternity & Sorority Houses
 - Monasteries



Residential Group R-3

- Not classified as R-1, R-2 or I and where residents are primarily permanent in nature
 - Detached 1 & 2 Family Dwellings
 - Townhouses
 - Adult and Child Care with 6 or fewer persons
 - May comply with IRC



Residential Group R-4

- Residential Care or Assisted Living Facilities
 - More than 3 but less than 16 persons receiving personal care
- Shall meet the construction requirements a defined for Group R-3 except as otherwise provided for by the State Building Code
- Residents must be capable of self-preservation



Storage (Group S)

- *Use of a building, structure or portion thereof for storage that is not classified as a hazardous occupancy*
- Two Sub-classes
 - S-1 Moderate hazard
 - S-2 Light Hazard



S-1 Moderate Hazard

- Storage of materials not classified as S-2
- Materials that are combustible and burn with ease
 - Aircraft repair hangar
 - Bags, cloth, burlap, paper
 - Books and rolled paper
 - Furniture
 - Grains
 - Lumber
 - Motor Vehicle Repair
 - Upholstery & Mattresses



S-2 Low Hazard

- Storage of noncombustible materials such as products on wooden pallets or in paper cartons
 - Beverages up to 12% alcohol in metal, glass or ceramic containers
 - Cement in bags
 - Food Products
 - Frozen Foods
 - Metal Parts
 - Stoves



Miscellaneous (Group U)

- *Buildings of an accessory character and miscellaneous structures not classified as any specific occupancy*
 - Agricultural Buildings
 - Barns
 - Carports
 - Fences more than 6 feet high
 - Grain Silos
 - Greenhouses
 - Stables
 - Towers



Building Code



- o **Mixed Uses** (302.3 CSBC). The Building Code provides two ways to treat a mixed use for new construction.
 - Nonseparated Uses (302.3.1 CSBC)
 - Separated Uses (302.3.2 CSBC)
- o **Nonseparated Uses**
 - Most restrictive provisions regarding **area/height**, construction type, special occupancy requirements and fire protection requirements for the most restrictive use apply to the entire building.
- o **Separated Uses**
 - Uses separated by fire rated construction
 - Use requirements applied to each use individually.



Building Code



- o **Area/Height** (503 CSBC)
 - Building Code limits the size of a building based upon:
 - Construction Type
 - Use Group
 - Fire Protection
 - Table 503 (CSBC) provides limitations
 - ie: A Bar (A-2) of unprotected wood frame construction (VB) without sprinkler protection is limited to 1 story in height and 6,000 s.f. in area



Table 503

GENERAL BUILDING HEIGHTS AND AREAS

TABLE 503 ALLOWABLE HEIGHT AND BUILDING AREAS Height restrictions shown as stories and feet above grade plane. Area limitations as determined by the definition of "Area, Building" per floor.									
GROUP	TYPE	TYPE I		TYPE II		TYPE III		TYPE IV	
		A	B	A	B	A	B	A	B
M-1	A	15	15	15	15	15	15	15	15
M-1	B	15	15	15	15	15	15	15	15
M-2	A	15	15	15	15	15	15	15	15
M-2	B	15	15	15	15	15	15	15	15
M-3	A	15	15	15	15	15	15	15	15
M-3	B	15	15	15	15	15	15	15	15
M-4	A	15	15	15	15	15	15	15	15
M-4	B	15	15	15	15	15	15	15	15
M-5	A	15	15	15	15	15	15	15	15
M-5	B	15	15	15	15	15	15	15	15
M-6	A	15	15	15	15	15	15	15	15
M-6	B	15	15	15	15	15	15	15	15
M-7	A	15	15	15	15	15	15	15	15
M-7	B	15	15	15	15	15	15	15	15
M-8	A	15	15	15	15	15	15	15	15
M-8	B	15	15	15	15	15	15	15	15
M-9	A	15	15	15	15	15	15	15	15
M-9	B	15	15	15	15	15	15	15	15
M-10	A	15	15	15	15	15	15	15	15
M-10	B	15	15	15	15	15	15	15	15
M-11	A	15	15	15	15	15	15	15	15
M-11	B	15	15	15	15	15	15	15	15
M-12	A	15	15	15	15	15	15	15	15
M-12	B	15	15	15	15	15	15	15	15
M-13	A	15	15	15	15	15	15	15	15
M-13	B	15	15	15	15	15	15	15	15
M-14	A	15	15	15	15	15	15	15	15
M-14	B	15	15	15	15	15	15	15	15
M-15	A	15	15	15	15	15	15	15	15
M-15	B	15	15	15	15	15	15	15	15
M-16	A	15	15	15	15	15	15	15	15
M-16	B	15	15	15	15	15	15	15	15
M-17	A	15	15	15	15	15	15	15	15
M-17	B	15	15	15	15	15	15	15	15
M-18	A	15	15	15	15	15	15	15	15
M-18	B	15	15	15	15	15	15	15	15
M-19	A	15	15	15	15	15	15	15	15
M-19	B	15	15	15	15	15	15	15	15
M-20	A	15	15	15	15	15	15	15	15
M-20	B	15	15	15	15	15	15	15	15
M-21	A	15	15	15	15	15	15	15	15
M-21	B	15	15	15	15	15	15	15	15
M-22	A	15	15	15	15	15	15	15	15
M-22	B	15	15	15	15	15	15	15	15
M-23	A	15	15	15	15	15	15	15	15
M-23	B	15	15	15	15	15	15	15	15
M-24	A	15	15	15	15	15	15	15	15
M-24	B	15	15	15	15	15	15	15	15
M-25	A	15	15	15	15	15	15	15	15
M-25	B	15	15	15	15	15	15	15	15
M-26	A	15	15	15	15	15	15	15	15
M-26	B	15	15	15	15	15	15	15	15
M-27	A	15	15	15	15	15	15	15	15
M-27	B	15	15	15	15	15	15	15	15
M-28	A	15	15	15	15	15	15	15	15
M-28	B	15	15	15	15	15	15	15	15
M-29	A	15	15	15	15	15	15	15	15
M-29	B	15	15	15	15	15	15	15	15
M-30	A	15	15	15	15	15	15	15	15
M-30	B	15	15	15	15	15	15	15	15
M-31	A	15	15	15	15	15	15	15	15
M-31	B	15	15	15	15	15	15	15	15
M-32	A	15	15	15	15	15	15	15	15
M-32	B	15	15	15	15	15	15	15	15
M-33	A	15	15	15	15	15	15	15	15
M-33	B	15	15	15	15	15	15	15	15
M-34	A	15	15	15	15	15	15	15	15
M-34	B	15	15	15	15	15	15	15	15
M-35	A	15	15	15	15	15	15	15	15
M-35	B	15	15	15	15	15	15	15	15
M-36	A	15	15	15	15	15	15	15	15
M-36	B	15	15	15	15	15	15	15	15
M-37	A	15	15	15	15	15	15	15	15
M-37	B	15	15	15	15	15	15	15	15
M-38	A	15	15	15	15	15	15	15	15
M-38	B	15	15	15	15	15	15	15	15
M-39	A	15	15	15	15	15	15	15	15
M-39	B	15	15	15	15	15	15	15	15
M-40	A	15	15	15	15	15	15	15	15
M-40	B	15	15	15	15	15	15	15	15
M-41	A	15	15	15	15	15	15	15	15
M-41	B	15	15	15	15	15	15	15	15
M-42	A	15	15	15	15	15	15	15	15
M-42	B	15	15	15	15	15	15	15	15
M-43	A	15	15	15	15	15	15	15	15
M-43	B	15	15	15	15	15	15	15	15
M-44	A	15	15	15	15	15	15	15	15
M-44	B	15	15	15	15	15	15	15	15
M-45	A	15	15	15	15	15	15	15	15
M-45	B	15	15	15	15	15	15	15	15
M-46	A	15	15	15	15	15	15	15	15
M-46	B	15	15	15	15	15	15	15	15
M-47	A	15	15	15	15	15	15	15	15
M-47	B	15	15	15	15	15	15	15	15
M-48	A	15	15	15	15	15	15	15	15
M-48	B	15	15	15	15	15	15	15	15
M-49	A	15	15	15	15	15	15	15	15
M-49	B	15	15	15	15	15	15	15	15
M-50	A	15	15	15	15	15	15	15	15
M-50	B	15	15	15	15	15	15	15	15
M-51	A	15	15	15	15	15	15	15	15
M-51	B	15	15	15	15	15	15	15	15
M-52	A	15	15	15	15	15	15	15	15
M-52	B	15	15	15	15	15	15	15	15
M-53	A	15	15	15	15	15	15	15	15
M-53	B	15	15	15	15	15	15	15	15
M-54	A	15	15	15	15	15	15	15	15
M-54	B	15	15	15	15	15	15	15	15
M-55	A	15	15	15	15	15	15	15	15
M-55	B	15	15	15	15	15	15	15	15
M-56	A	15	15	15	15	15	15	15	15
M-56	B	15	15	15	15	15	15	15	15
M-57	A	15	15	15	15	15	15	15	15
M-57	B	15	15	15	15	15	15	15	15
M-58	A	15	15	15	15	15	15	15	15
M-58	B	15	15	15	15	15	15	15	15
M-59	A	15	15	15	15	15	15	15	15
M-59	B	15	15	15	15	15	15	15	15
M-60	A	15	15	15	15	15	15	15	15
M-60	B	15	15	15	15	15	15	15	15
M-61	A	15	15	15	15	15	15	15	15
M-61	B	15	15	15	15	15	15	15	15
M-62	A	15	15	15	15	15	15	15	15
M-62	B	15	15	15	15	15	15	15	15
M-63	A	15	15	15	15	15	15	15	15
M-63	B	15	15	15	15	15	15	15	15
M-64	A	15	15	15	15	15	15	15	15
M-64	B	15	15	15	15	15	15	15	15
M-65	A	15	15	15	15	15	15	15	15
M-65	B	15	15	15	15	15	15	15	15
M-66	A	15	15	15	15	15	15	15	15
M-66	B	15	15	15	15	15	15	15	15
M-67	A	15	15	15	15	15	15	15	15
M-67	B	15	15	15	15	15	15	15	15
M-68	A	15	15	15	15	15	15	15	15
M-68	B	15	15	15	15	15	15	15	15
M-69	A	15	15	15	15	15	15	15	15
M-69	B	15	15	15	15	15	15	15	15
M-70	A	15	15	15	15	15	15	15	15
M-70	B	15	15	15	15	15	15	15	15
M-71	A	15	15	15	15	15	15	15	15
M-71	B	15	15	15	15	15	15	15	15
M-72	A	15	15	15	15	15	15	15	15
M-72	B	15	15	15	15	15	15	15	15
M-73	A	15	15	15	15	15	15	15	15
M-73	B	15	15	15	15	15	15	15	15
M-74	A	15	15	15	15	15	15	15	15
M-74	B	15	15	15	15	15	15	15	15
M-75	A	15	15	15	15	15	15	15	15
M-75	B	15	15	15	15	15	15	15	15
M-76	A	15	15	15	15	15	15	15	15
M-76	B	15	15	15	15	15	15	15	15
M-77	A	15	15	15	15	15	15	15	15
M-77	B	15	15	15	15	15	15	15	15
M-78	A	15	15	15	15	15	15	15	15
M-78	B	15	15	15	15	15	15	15	15
M-79	A	15	15	15	15	15	15	15	15
M-79	B	15	15	15	15	15	15	15	15
M-80	A	15	15	15	15	15	15	15	15
M-80	B	15	15	15	15	15	15	15	15
M-81	A	15	15	15	15	15	15	15	15
M-81	B	15	15	15	15	15	15	15	15
M-82	A	15	15	15	15	15	15	15	15
M-82	B	15	15	15	15	15	15	15	15
M-83	A	15	15	15	15	15	15	15	15
M-83	B	15	15	15	15	15	15	15	15
M-84	A	15	15	15	15	15	15	15	15
M-84	B	15	15	15	15				



CHAPTER 6 BUILDING SERVICES AND SYSTEMS

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- o 610 Commercial Kitchen Hoods 56



610 Commercial Kitchen Hoods

610.1 General. Commercial kitchen exhaust hoods shall comply with the requirements of the *International Mechanical Code*.

610.2 Where required. A Type I hood shall be installed at or above all commercial cooking appliances and domestic cooking appliances used for commercial purposes that produce grease vapors.



Business Occupancies

o Definition – New

- Using part III of the CFSC Guidebook find the definition of a new business occupancy, list 5 examples of a business occupancy and the code flow.

Part III of the CSFSC

Chapter 2 – Section 202 – General Definitions **p. 23** Guide Book to **p.31** of Occupancy Classification – **Business Group B** includes a building or a portion thereof, for professional or service-type transactions including storage of records and accounts examples:

- Airport traffic control towers
- Animal hospitals, kennels, pounds
- Banks
- Car Wash
- Dry cleaning, laundries; **pick-up, delivery , self-service**
- NOT where commercial scale of cleaning takes place -**
- Factory Industrial Group F-1 .**
- Educational occupancies above the 12th grade



Business Occupancies

- o Group B Medical Occupancies
 - Outpatient clinics with general anesthesia or life support
 - Dental centers with general anesthesia
 - One day surgical centers
 - Physician's office with general anesthesia



Business Occupancies

- o Application
 - What section of the CSFSC will apply to the following business occupancies:
 - In a building built in 2009
 - In a building built in 2000 with an addition built in 2008
 - In a building built in 1980 getting a new fire alarm



Business Occupancies

- o Application
 - Part III applies to new buildings, or portions thereof, constructed, renovated, altered or undergoing a change of occupancy as a business



Business Occupancies-New

- o Fire Resistance Rated Construction
 - What parts of the building will we be looking at to have fire rated construction?
 - Where would you find it?

Corridor walls, exit enclosures, fire walls, fire barriers, shafts, penetrations

701.1 Scope – requirements for fire resistive construction & enclosure of floor openings and shafts per Chapter 7 of the CSBC.

Section 706 Fire Barriers
Section 708 Fire Partitions

Section 707 Shaft Enclosures
Section 709 Smoke Barriers

CSBC 707.2 Shaft enclosures required p.99

707.4 Fire-resistance rating p. 99 -2 hrs 4 or more stories, 1hr less than 4

CSFSC 1016 Corridors p.136

1016.1 Construction note exception 4 for Group B see Table 1016.1 p.137

CSFSC 1019 Vertical Exit Enclosures p.139

Opening protectives



Business Occupancies-New

- o Fire Resistance Rated Construction cont.
 - What happens if we have to cut into a wall for a door, vent or damper?
 - What are these openings called and where are they found?

- o **703.2 Opening protectives-** per NFPA 80 fire doors not to be blocked or obstructed (CSFSC).

- o **Section 715 Opening Protectives CSBC**

715.2 Fire rated glazing

715.3 Fire door & shutter assemblies

715.4 Fire protection rated glazing

- o **Section 716 Ducts & Air Transfer Openings**



Business Occupancies

- o Section 715 Opening Protectives (CSBC)
 - What type of components does **715** include and or address?

p.106 CSBC

715.2 Fire-resistance –rated glazing

715.3 Fire door and shutter assemblies

715.3.1 Side-hinged/pivoted doors

715.3.2 Other types of doors

715.3.3 Door assemblies in corridors/smoke barriers

715.3.4 Doors in vertical exit enclosures and exit passageways

4.1 Glazing in doors

715.3.5 Labeled protective assemblies

5.1 Fire door labeling requirements

715.3.6 Glazing materials

715.3.7 Door closing – Fire doors self closing/latching

715.4 Fire-protection rated glazing



Business Occupancies

- o Interior finish, decorative materials & furnishing

Give the definition and examples of interior finishes and contents for new businesses

- Part III – Chapter 8 p. 58

801.1 Scope – provisions of **Chapter 8** of the **CSFSC** and **Chapter 8** of the **CSBC** shall govern a new business occupancy.

CSFSC – 801, 802, 803, 805, 806

CSBC – 801, 802, 803, 804, 805[F]



What do you reference when a new interior finish is installed/applied in an existing business?

- Part III CSFSC to Section 804 in CSBC.

During a final inspection of a new business you find drapes covering an exit door. What sections do you reference for any violations?

- 803.1.3 Obstructions – furniture/objects cannot obstruct exits or the visibility to find exits



Business Occupancies -New

o Fire Protection Systems

- When would a sprinkler be required?
- When would a stand-pipe be required?
- When would a fire alarm be required?

Section 903 Automatic Sprinkler Systems

903.2 – Where required p. 68

903.2.14 Additional statutory requirements – 5 story p. 72

Section 905 Standpipe Systems

905.3 Required Installations p. 78

Section 907 Fire Alarm & Detection

907.2 Where required p. 82

907.2.2 – manual fire alarm system required in Class B with an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge. **P. 83 CSFSC**



Business Occupancies

o Means of Egress

Occupant load- **HOW MANY?**

- Section 1003 – General Means of Egress
p. 111
- Section 1004 – Occupant Load – Table
1004.1.2 **p. 112-113**



Business Occupancies

o Means of Egress cont.

• Number of exits

- How many are required?
- What about travel distance?

Section 1018 – Number of Exits & Continuity **p. 138**



Business Occupancies

o Is a single exit allowed in a NEW business occupancy?

o If so what are the requirements?

TABLE 1018.2
BUILDINGS WITH ONE EXIT

OCCUPANCY	MAXIMUM HEIGHT OF BUILDING ABOVE GRADE PLANE	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE
A, B ^a , E, F, M, U	1 Story	50 occupants and 75 feet travel distance
H-2, H-3	1 Story	3 occupants and 25 feet travel distance
H-4, H-5, I, R	1 Story	10 occupants and 75 feet travel distance
S ^a	1 Story	30 occupants and 100 feet travel distance
B ^a , F, M, S ^a	2 Stories	30 occupants and 75 feet travel distance
R-2	2 Stories ^c	4 dwelling units and 50 feet travel distance

For SI: 1 foot = 304.8 mm.

a. For the required number of exits for open parking structures, see Section 1018.1.1.

b. For the required number of exits for air traffic control towers, see Section 412.1 of the *International Building Code*.

c. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1025 shall have a maximum height of three stories above grade.

d. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 with an occupancy in Group B shall have a maximum travel distance of 100 feet.

Interior exit stairways and interior exit ramps shall be



Business Occupancies

- Means of Egress cont.

- Egress Capacity
 - Is it 0.2 or 0.3
 - Clear width

Section – 1005 Egress Width **p. 114**

The **MOST** restrictive element of MOE determines the capacity.



Business Occupancies

- Means of Egress cont.

- Stairs, Doors, & Ramps
 - What does it matter?

Stairs Section 1009 – Stairways & Handrails (**Interior**) **p. 124**

Section 1022 - **Exterior** Stairways **p.143**

Section 1012 – Guards **p. 130** – Don't FORGET

Doors Section 1008 – Doors, Gates & Turnstiles **p.118**

1008.1.3.4 – Access-controlled egress doors **Group B p. 121**

1008.1.3.5 – Security grilles **Group B p. 121**

Ramps Section 1010 – Ramps (**Interior**) **p.128**

Section 1012 – Guards **p.130**

Section 1022 – **Exterior** Exit Ramps & Stairways **p.143**



Business Occupancies

o Means of Egress cont.

• Arrangement

Can I get there from here?

Section 1015

Exit Access Travel Distance p. 135

Table 1015.1

200 ft. (non-sprinklered) 300 ft. (sprinklered)

Section 1013 Exit Access

1013.3 Common path of travel 75' p. 132

1013.4.1 Groups B, minimum clear aisle width
per 1005.1 but no less than 36" p. 132



Business Occupancies

o Means of Egress cont.

• No. of Exit Doorways from any space

1014 Exit and Exit Access Doorways p.133

Table **1014.1** (1 Means of Egress)

Group B 50 Max occupant load p.133



Business Occupancies

- o Means of Egress cont.

Illumination

1006 Means of Egress Illumination
p.115 CFSC



Business Occupancies

- o Group B Medical Occupancies
 - Provisions of 401.17 shall apply to Group B medical and dental occupancies that provide services to 4 or more patients who may simultaneously be rendered incapable of self-preservation during an emergency
 - Section 401.17 also refers to Section 420 of State Building Code



Business Occupancies

- o Group B Medical Occupancies
 - What are the specific CSBC requirements for Group B Medical?

- Section 420.3 Separation requirements
- Section 420.4 Smoke compartments
- Section 420.5 Means of egress
 - 420.5.1 Corridor / passageway width
 - 420.5.2 Number of exits
 - 420.5.3 Travel distance
- Section 420.6 Essential electrical system
- Section 420.7 – Fire alarm & detection
 - 420.7.1 Emergency forces notification
- Section 420.8 – Laboratories
- Section 420.9 – Anesthetizing locations
- Section 420.10 – Combustion air



Business Occupancies

o Exercise

- In a business occupancy what is the minimum fire protection rating for a door in a corridor?



Business Occupancies-New

Exercise – Answers

Section 701 (CSFSC) to Section 701 (CSBC)

701(CSBC) to Section 715 Opening Protectives (CSBC)
to:

Section 715.3.3 Door assemblies in corridors

Fire door assemblies minimum 20 min rating where
located in corridor walls



Business Occupancies - New

- o In a Group B occupancy what are the finish requirements for
 - Vertical exit in a sprinklered 4 story structure?
 - Exit access corridor in a sprinklered structure?
 - A room's interior finish?
 - Exit access corridor in a nonsprinklered building?
 - Can paneling be used in a grade lobby serving as an exit passageway?



Business Occupancies - New

- o Exercise- Answers
 - Sect. 806 CSFSC to 806.3 to Table 806.3 p.64 CSFSC GB
 - Group B
 - Sprinklered vertical exit – Class B
 - Sprinklered exit access corridor – Class C
 - Room's interior finish – Class C (sprinklered or not)
 - Non-sprinklered exit access corridor – Class B
 - YES – Class C wainscotting/paneling not more than 1,000 sq. ft. per note (a) of Table 806.3



Business Occupancies - New

- o Egress
 - What are the conditions placed on dead – end corridors in new business occupancies ?



Business Occupancies - New

o Exercise – Answer

- Sect. 1016 to 1016.3 Dead ends
 - Where more than 1 exit/doorway is required there will be no dead ends in corridors more than **20** ft. in length
- Exceptions
 - Group B where building is sprinklered the length of dead end shall not exceed **50** ft.
 - Dead end not limited where the length of the dead end is less than 2.5 times the least width of the dead end corridor



CT Fire Prevention Code



Sec. 29-291a-1. The Connecticut State Fire Prevention Code



Chapter 20 – Business

o Drills

- In business occupancies occupied by more than 500 people or
- By more than 100 people above or below street level
- Employees and supervisors
- Shall periodically be instructed and hold drills where practical



Chapter 20 – Business

- Extinguisher training
 - Designated employees of business occupancies shall be periodically instructed in using portable fire extinguishers



Fire Code References to the Building Code

Chapter 4 Special Requirements 2009

Errata:

- 401.7.1 Alternative Compliance for small Group Homes
- 401.18 Organic Coatings
- 401.19 Application of Flammable Finishes
- 401.20 Mezzanines



CT STATE BUILDING CODE CHAPTER 4 SPECIAL DETAILED REQUIREMENTS BASED UPON USE AND OCCUPANCY

401.1 Detailed use and occupancy requirements.

In addition to the occupancy and construction requirements in this code, the provisions of this chapter apply to the special uses and occupancies described herein.



Section 402 - Covered mall buildings.

Covered mall buildings not exceeding three floor levels at any point nor more than three stories above grade shall comply with the provisions of Section 402 of the State Building Code.

402.3 Lease Plan;
402.4 Means of Egress;
402.4.1 Determination of occupant load;
402.4.1.1 Occupant formula;
402.4.1.2 OLF range 30' to 50';
402.4.1.3 Anchor building;
402.4.1.4 Food courts;
402.4.2 Number of Means of Egress;
402.4.3 Arrangement of means of egress.
402.4.3.1 Anchor building means of egress;
402.4.4 Distance to exits; Access to exits;
402.4.5.1 Exit passageway enclosures;
402.4.6 Service areas fronting on exit passageways;

402.5 Mall width;
402.5.1 Minimum width;
402.6 Types of construction;
402.7 Fire-resistance-rated separation;
402.7.1 Attached garage;
402.7.2 Tenant separations;
402.7.3 Anchor building separation;
402.7.3.1 Openings between anchor building and mall;
402.8 Automatic sprinkler system;
402.8.1 Standpipe system;

402.9 Smoke control;
402.10 Kiosks;
402.11 Security grilles and doors;
402.12 Standby power;
402.13 Emergency voice/alarm communication system;
402.14 Plastic signs as to Area, Height and width, Location, Plastics other than foam plastics, Encasement, Foam plastics, Density and Thickness;
402.15 Fire Department access to equipment.



Section 403 - High-rise buildings.

Buildings having occupied floors located more than 75 feet (22,860 mm) above the lowest level of fire department access shall comply with Section 403 of the State Building Code.



Section 404 - Atriums.

Atriums shall comply with Section 404 of the State Building Code.



Section 405 - Underground buildings.

Building spaces having a floor level used for human occupancy more than 30 feet (9144 mm) below the lowest level of exit discharge shall comply with Section 405 of the State Building Code.



Section 406 - Motor-vehicle-related occupancies.

Motor-vehicle-related occupancies, including, but not limited to, parking and repair garages, shall comply with Section 406 of the State Building Code.



Section 407 - Group I-2 occupancies.

Occupancies in Group I-2 shall comply with the provisions of Section 407 of the State Building Code and other applicable provisions of this code.



407.1 Alternative compliance for small group homes.

See Section 407.12 of the State Building Code for alternative compliance provisions for Group I-2 group homes serving four to six persons who are not capable of self-preservation.



Section 408 - Group I-3 occupancies.

Occupancies in Group I-3 shall comply with the provisions of Section 408 of the State Building Code and other applicable provisions of this code.



Section 409 - Motion picture projection rooms.

Occupancies containing rooms in which ribbon-type cellulose acetate or other films are utilized in conjunction with electric arc, xenon or other light-source projection equipment that develops hazardous gases, dust or radiation shall comply with the provisions of Section 409 of the State Building Code.

○ ○ ○

Section 412 – Aircraft related occupancies.

Aircraft-related occupancies, including, but not limited to, airport traffic control towers, hangars and heliports and helistops, shall comply with Section 412 of the State Building Code.

○ ○ ○

Section 413 - Combustible storage.

o High-piled stock or rack storage in any occupancy shall also comply with Section 413 of the State Building Code.

o 413. General. High-piled stock or rack storage in any occupancy group shall comply with the *International Fire Code*.
CHAPTER 23

○ ○ ○

Sections 414 & 415 - Hazardous materials & Groups H-1, H-2, H-3, H-4 and H-5.

Buildings or structures occupied for the processing, dispensing, use or storage of hazardous materials and Groups H-1, H-2, H-3, H-4 and H-5 shall also comply with Sections 414 and 415 of the State Building Code.





Section 417 - Drying rooms.

A drying room or dry kiln installed within a building shall comply with Section 417 of the State Building Code.



Section 419 - Group E Educational occupancies.

Buildings containing Group E educational occupancies shall comply with Section 419 of the State Building Code.



Section 420 - Group B Medical occupancies.

Buildings containing Group B medical occupancies shall comply with Section 420 of the State Building Code.
